

# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

## North Carolina Agricultural Research Service

Whereas, THERE HAS BEEN PRESENTED TO THE  
**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE **LAW**.

**NOW**, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY **LAW**, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE **PLANT VARIETY PROTECTION ACT** (84 Stat. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

TOMATO

'NC50-7'



*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington this 27th day of January in the year of our Lord one thousand nine hundred and eighty-three*

*Attest:*  
*Kenneth A. Evans*

Acting  
Commissioner  
Plant Variety Protection Office  
Grain Division  
Agricultural Marketing Service

*John R. Block*  
Secretary of Agriculture

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
*(Instructions on reverse)*

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1. NAME OF APPLICANT(S) North Carolina Agricultural Research Service		2. TEMPORARY DESIGNATION NC50-7-53-1-3-1		3. VARIETY NAME NC50-7	
4. ADDRESS (Street and No. or R.F.O. No., City, State, and Zip Code) P. O. Box 5847 North Carolina State University Raleigh, NC 27650			5. PHONE (Include area code) (919) 737-2718		FOR OFFICIAL USE ONLY PVPO NUMBER <b>8200070</b>
6. GENUS AND SPECIES NAME Lycopersicon esculentum		7. FAMILY NAME (Botanical) Solanaceae		FILING DATE 2/18/82 TIME 1:00 <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
8. KIND NAME tomato		9. DATE OF DETERMINATION Aug. 28, 1981		FEES RECEIVED AMOUNT FOR FILING \$ 500.00 DATE 2/18/82 AMOUNT FOR CERTIFICATE \$ 250.00 DATE 1/11/83	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) A subdivision of the School of Agriculture & Life Sciences of NCSU, Raleigh, NC with responsibility for research				11. DATE OF INCORPORATION N/A	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION N/A				12. DATE OF INCORPORATION N/A	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. D. F. Bateman, Director North Carolina Agricultural Research Service P. O. Box 5847 Raleigh, NC 27650					

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

- a.  Exhibit A, Origin and Breeding History of the Variety (See Section 52 OF the Plant Variety Protection Act.)
- b.  Exhibit B, Novelty Statement
- c.  Exhibit C, Objective Description of the Variety (Request form FROM Plant Variety Protection Office.)
- d.  Exhibit D, Additional Description of the Variety *only 4/5/82 per J. Mann*

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) OF the Plant Variety Protection Act.)  
 Yes (If "Yes," answer items 16 and 17 below)  No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  
 Yes  No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?  
 Foundation  Registered  Certified

18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S. OR OTHER COUNTRIES?  
 a. Yes (If "Yes," give names of countries and dates)  
 No

19. HAVE RIGHTS BEEN GRANTED IN THE U.S. OR OTHER COUNTRIES?  
 Yes (If "Yes," give names of countries and dates)  
 No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.  
 The undersigned applicant(s) is (ate) the owner(s) of this sexually reduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act,  
 Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

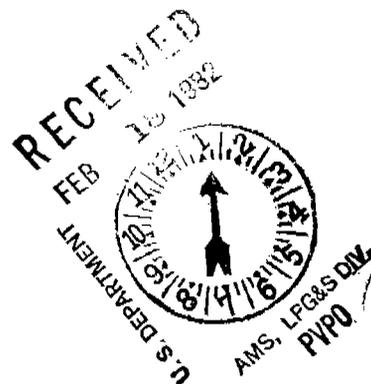
SIGNATURE OF APPLICANT <i>D. F. Bateman</i>	DATE 1/25/82
SIGNATURE OF APPLICANT	DATE A

## INSTRUCTIONS

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 *filing fee and \$250 examination fee*) to U.S. Department of Agriculture, Agricultural Marketing Service, Livestock, Meat, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (*See section 180.175 of the Regulations and Rules of Practice.*) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

### Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41 (a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (*See section 180.16 of the Regulations and Rules of Practice.*)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.





8200070

13B. Exhibit B. Novelty Statement

NC 50-7 is most similar to 'Flora-Dade' in vine and fruit type. NC 50-7 differs from 'Flora-Dade' in having the u gene for uniform green shoulder color of unripe fruit. NC 50-7 lacks the I-2 gene present in 'Flora-Dade'. This gene confers resistance to race 2 of Fusarium oxysporum f. sp. lycopersici. NC 50-7 has the jointed pedicel character, whereas 'Flora-Dade' has the jointless pedicel (j-2 gene).

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, GRAIN, MD SEED DIVISION  
 BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY  
 TOMATO (Lycopersicon esculentum Mill.)

Name of applicant North Carolina Agricultural Research Service	Temporary designation NC 50-7-53-1-3-1	Variety Name NC 50-7
Address (Street and No. or R.F.D. No., City, State, Zip) P. O. Box 5847 North Carolina State University Raleigh, NC 27650		FOR OFFICIAL USE ONLY PVPO NUMBER 8200070

Choose responses which best represent your variety in the characters below. When a single quantitative value is requested (e.g. fruit weight), your answer should be the mean of an adequate, unbiased sample of plants. The applicant variety should be compared with at least one well-known standard check variety of the same type, and grown in the same trial(s). The characters on this form should be described from plants grown under normal conditions of culture for the variety. Indicate by a check whether trial data are from greenhouse \_\_\_\_\_ or field X plantings. Trials direct-seeded \_\_\_\_\_ or transplanted X. Give locations and dates of trials Fletcher, North Carolina  
 June-Sept.. 1979-1981 Use leading zeroes when necessary (e.g. 019 or 0811, etc.).  
 Complete this form as fully as possible for best characterization of the variety.

1. SEEDLING: (2-15 cm, well-illuminated)

- Anthocyanin in hypocotyl: 1 = absent 2 = present  
 Cotyledon: 1 = normal 2 = giant

2. MATURE PLANT:

- Growth: 1 = indeterminate 2 = semi-determinate 3 = determinate  
 Size (compared to others of its growth type): 1 = small 2 = medium 3 = large  
 Habit: 1 = sprawling (**decumbent**) 2 = semi-erect 3 = erect  
 Foliage cover: 1 = light 2 = moderate 3 = heavy

3. STEM:

- Internode length (between the 1st and 4th inflorescences):  
 1 = short ( ) 2 = intermediate (Flora-Dade) 3 = long ( )  
 Branching: 1 = sparse (**Brehm's Solid Red**) 2 = intermediate (Flora-Dade)  
 3 = profuse (UC82)  
 Branching at cotyledonary or first leafy node: 1 = present 2 = absent  
 Pubescence: 1 = smooth (no long hairs) 2 = sparsely hairy (scattered long hairs)  
 3 = densely hairy or canescent  
 No. of nodes below the first inflorescence:  
 1 = few ( ) 2 = Intermediate (**Flora-Dade**) 3 = many ( )  
 No. of nodes (leaves) between inflorescences  
 Thickness: 1 = slender, weak 2 = medium thickness 3 = thick, stiff

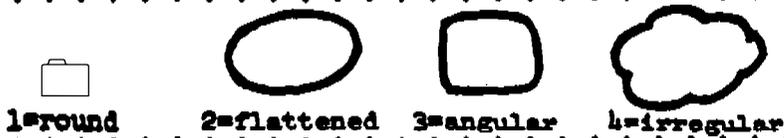
4. LEAF (Mature leaf under the 1st to 3rd inflorescence):

- Type: 1 = tomato 2 = potato  
 Division: 1 = once-pinnate 2 = Intermediate (pinnate-bipinnate)  
 3 = **bipinnate**, many small leaflets with the large ones  
 Attitude: 1 = **semi-erect** 2 = horizontal 3 = drooping  
 Leaflet blade: 1 = thin 2 = medium 3 = thick  
 Bases of major leaflets: 1 = even 2 = oblique (the sides offset on petiole)  
 Margins of major leaflets: 1 = nearly entire 2 = shallowly toothed or scalloped  
 3 = deeply toothed or cut, especially towards base  
 Marginal rolling: 1 = absent 2 = present

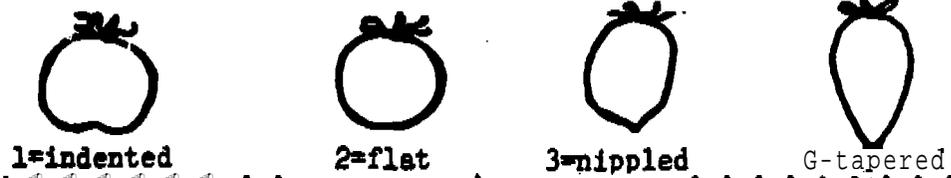
7. FRUIT (3rd fruit of 2nd or 3rd cluster):

TOMATO-3

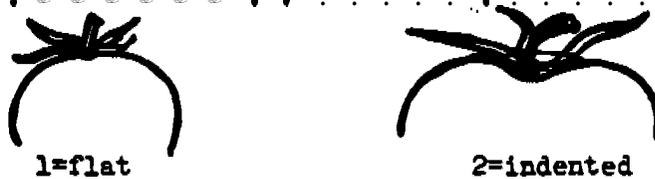
Shape of transverse section:



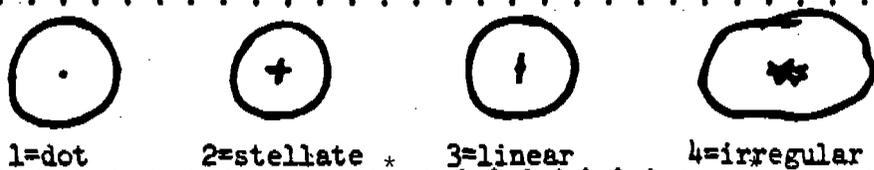
Shape of blossom end:



Shape of stem end:



Shape of pistil scar:



- Fruit surface: 1 = smooth 2 = slightly fasciated 3 = moderately fasciated
- Fruit color (mature-green stage):
  - 1 = light green ('Lanai', VF145-F5) 2 = Lt. gray-green ( )
  - 3 = apple green ('Heinz 1439 VF') 4 = dark green ( )
- Fruit pattern (mature-green stage): 1 = green shouldered 2 = uniform green
- Mature fruit color (full-ripe): 1 = white 2 = yellow 3 = tangerine
  - 4 = pink 5 = red 6 = brownish-red
  - 7 = greenish 8 = other (specify) \_\_\_\_\_
- Flesh color (full-ripe): 1 = yellow 2 = red 3 = crimson 4 = other \_\_\_\_\_
- Epidermis: 1 = normal 2 = easy-peel
- Epidermis color: 1 = colorless 2 = yellow
- Epidermis thickness: 1 = thin 2 = average 3 = thick
- Thickness of pericarp: 1 = thin ( < 3 mm) 2 = medium (3-6 mm) 3 = thick ( > 6 mm)
- Thickness of **pericarp** of check variety (same scale) Variety: Flora-Dade
- Core size: 1 = **coreless** 2 = small 3 = medium 4 = large
- Core shape: 1 = solid, unbranched 2 = branched
- Core texture: 1 = soft, edible 2 = tough or fibrous
- Stem scar size: 1 = small ( ) 2 = medium ( ) 3 = large ( )
- No. of **locules**: 1 = two 2 = three and four 3 = five or more
- Fruit **firmness**<sup>1</sup> (minimum table-ripe):
  - 1 = extra-soft ('Gardener') 2 = very soft ('Valiant') 3 = soft ('Campbell 28')
  - 4 = fairly firm ('Tropic') 5 = firm ('MH-1') 6 = very firm ('UC-82')

8. PHENOLOGY (Growing degree days, or heat units on a base temperature of 51° F are preferable--but you may report either growing degree days or calendar days. Circle either "days" for calendar days, or "heat units" for growing degree days):

Days/heat units from seed to first open flower:

<input type="checkbox"/>	days, Application variety	<input type="checkbox"/>	days, Check variety No. 1	_____
<input type="checkbox"/>		<input type="checkbox"/>	days, Check variety No. 2	_____

Days/heat units from **seed/transplant** (indicate which) to first ripe fruit:

<input type="checkbox"/>	days, Application variety	<input type="checkbox"/>	days, Check variety No. 1	_____
<input type="checkbox"/>		<input type="checkbox"/>	days, Check variety No. 2	_____

<sup>1</sup>For definitions of these subjective terms see Kader & Morris (1976) Ins. Proc. 2nd Tomato Quality Workshop.

12. DISEASE AND PEST REACTION (Use code: 0=not tested, 1=susceptible, 2=resistant) If claim of novelty is based wholly or in part upon disease resistance, trial data should be appended (Exhibit D) and should include date and location of trial(s), method of testing, reaction of application variety, and reaction of check varieties (identified by name).

Viral Diseases:

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Cucumber mosaic  | <input type="checkbox"/> Curly top                     | <input type="checkbox"/> Potato-Y virus                |
| <input type="checkbox"/> Tobacco mosaic, Race 0                                   | <input type="checkbox"/> Tobacco mosaic, Race 1 (Tm 1) | <input type="checkbox"/> Tobacco mosaic, Race 2 (Tm 2) |
| <input type="checkbox"/> Tobacco mosaic, Race 2 <sup>2</sup> (Tm 2 <sup>2</sup> ) | <input type="checkbox"/> Tomato spotted wilt           | <input type="checkbox"/> Tomato yellows                |
| <input type="checkbox"/> Other (specify) _____                                    |  |  |

Bacterial Diseases:

- |   |   |
|---|---|
| <input type="checkbox"/> Bacterial canker ( <u>Corynebacterium michiganense</u> ) | <input type="checkbox"/> Bacterial soft rot ( <u>Erwinia carotovora</u> )   |
| <input type="checkbox"/> Bacterial speck ( <u>Pseudomonas tomato</u> )            | <input type="checkbox"/> Bacterial spot ( <u>Xanthomonas vesicatorium</u> ) |
| <input type="checkbox"/> Bacterial wilt ( <u>Pseudomonas solanacearum</u> )       |   |
| <input type="checkbox"/> Other bacterial disease (specify) _____                  |   |

Fungal Diseases:

- |   |  |
|---|--|
| <input type="checkbox"/> Anthracnose ( <u>Colletotrichum</u> spp.)                                      | <input checked="" type="checkbox"/> Botrytis rot or mold ( <u>B. cinerea</u> )               |
| <input type="checkbox"/> Brown root rot or corky root ( <u>Pyrenochaeta lycopersici</u> )               | <input type="checkbox"/> Collar rot or stem canker ( <u>Alternaria solani</u> )              |
| <input checked="" type="checkbox"/> Early blight ( <u>Alternaria solani</u> ) defoliation               | <input type="checkbox"/> Fusarium wilt, Race 1 ( <u>F. oxysporum</u> f. <u>lycopersici</u> ) |
| <input checked="" type="checkbox"/> Fusarium wilt, Race 2 ( <u>F. oxysporum</u> f. <u>lycopersici</u> ) | <input type="checkbox"/> Gray leaf spot ( <u>Stemphylium solani</u> , <u>S. floridanum</u> ) |
| <input type="checkbox"/> Late blight, Race 0 ( <u>Phytophthora infestans</u> )                          | <input type="checkbox"/> Late blight, Race 1 ( <u>Phytophthora infestans</u> )               |
| <input type="checkbox"/> Leaf mold, Race 1 ( <u>Cladosporium fulvum</u> )                               | <input type="checkbox"/> Leaf mold, Race 2 ( <u>C. fulvum</u> )                              |
| <input type="checkbox"/> Leaf mold, Race 3 ( <u>C. fulvum</u> )   | <input type="checkbox"/> Leaf mold, other races (specify) _____                              |
| <input type="checkbox"/> Nailhead spot ( <u>Alternaria tomato</u> )                                     | <input type="checkbox"/> Phytophthora root rot ( <u>P. parasitica</u> )                      |
| <input type="checkbox"/> Rhizoctonia soil rot ( <u>R. solani</u> )                                      | <input type="checkbox"/> Septoria leaf blight ( <u>Septoria</u> spp.)                        |
| <input type="checkbox"/> Southern blight ( <u>Sclerotium rolfsii</u> )                                  | <input type="checkbox"/> Target leafspot ( <u>Corynespora casiiicola</u> )                   |
| <input checked="" type="checkbox"/> Verticillium wilt, Race 1 ( <u>V. albo-atrum</u> )                  | <input checked="" type="checkbox"/> Verticillium wilt, Race 2 ( <u>V. albo-atrum</u> )       |
| <input type="checkbox"/> Other fungal diseases (specify) _____  |  |

Insect and Pests:

- |  |
|--|
| <input type="checkbox"/> Colorado potato beetle ( <u>Leptinotarsa decemlineata</u> ) |
| <input type="checkbox"/> Root knot nematode ( <u>Meloidogyne incognita</u> )         |
| <input type="checkbox"/> Spider mites ( <u>Tetranychus</u> spp.)                     |
| <input type="checkbox"/> Sugar beet army worm ( <u>Spodopora exigua</u> )            |
| <input type="checkbox"/> Tobacco flea beetle ( <u>Epitrix hirtipennis</u> )          |
| <input type="checkbox"/> Tomato hornworm ( <u>Manduca quinquemaculata</u> )          |
| <input type="checkbox"/> Tomato fruitworm ( <u>Heliothis zea</u> )                   |
| <input type="checkbox"/> Whitefly ( <u>Trialeurodes vaporariorum</u> )               |
| <input type="checkbox"/> Other (specify) _____                                       |

Pollutants:

- |                                |   |  |
|--------------------------------|---|--|
| <input type="checkbox"/> Ozone | <input type="checkbox"/> Sulfur dioxide | <input type="checkbox"/> Other (specify) _____ |
|--------------------------------|---|--|

## REFERENCES

- Anonymous, 1976. All About Tomatoes. Ortho Books, Chevron Chemical Co., San Francisco. In three volumes: Midwest/Northeast Edition, West Edition, and South Edition.
- Ware, G. W. & J. P. McCollum, 1968, Producing Vegetable Crops. The Interstate Printer & Publishers, Inc., Danville, Illinois. (Chapter 30, pp. 451-473, "Tomatoes".) 3
- Webb, R. E., T. H. Barksdale, & A. K. Stoner, 1973, "Tomatoes" pp. 344-361 In: Nelson, R.R. (Ed.): Breeding Plants for Disease Resistance. Pennsylvania State University Press, University Park.
- Young, P. A. & J. W. MacArthur. 1947. Horticultural characters of tomatoes. Bull. Texas Agra

## 13D. Exhibit D. Additional Description of NC50-7

NC50-7 has exceeded 'Walter' and 'Flora-Dade' in yield and percent of U.S. Combination Grade fruit (Tables 1 and 2) and has been lower in percent cull grade (Table 3).

NC50-7 is highly resistant to all types of fruit cracking and has shown a much lower incidence of cracking than 'Walter' and 'Flora-Dade' (Table 4).

NC50-7 tends to set less fruit on the first inflorescence than 'Walter' and 'Flora-Dade', resulting in lower yield in early season (Table 1).

NC50-7 had larger fruit than 'Flora-Dade' in 2 of 3 seasons (Table 5).

Early set fruit of NC50-7 have shown some zippers (adnate anther scars) in all plantings.

Young plants of NC50-7 are more compact (shorter internodes) than 'Walter' and 'Flora-Dade'.

Fruit stems of NC50-7 are tightly attached to fruit and are difficult to remove,

## TOMATO - 4

8. **PHENOLOGY** (Growing degree days, **OR** heat units on a base temperature of 51° F are preferable--but you may report either growing degree days or calendar days. Circle either "days" or calendar days, or "heat **units**" for growing degree days) (Continued):

**Days/heat units from seed/transplant** (indicate which) to once-over harvest, if applicable:

days, Application variety    days, Check variety No. 1 \_\_\_\_\_  
   days, Check variety No. 2 \_\_\_\_\_

Days/heat units from breaker to **full-ripe stage**:  
  days, Application variety    days, Check variety No. 1 \_\_\_\_\_  
   days, Check variety No. 2 \_\_\_\_\_

Shelf life of ripe fruit:  
  days, Application variety   days, Check variety No. 1 \_\_\_\_\_  
  days, Check variety No. 2 \_\_\_\_\_

- Fruiting season: 1 = long ('Marglobe') 2 = medium ('Westover')  
 3 = short, concentrated ('VF 145') 4 = very concentrated ('UC 82')
- Relative maturity: 1 = early 2 = medium early 3 = medium  
 4 = medium late 5 = late

9. **ADAPTATION** (if more than one category applies, list all in rank order):

- Culture: 1 = field 2 = greenhouse  
  1 = unstaked 2 = staked or trellised
- Principal use(s): 1 = home garden 2 = fresh market  
 3 = processing 4 = other Breeding line
- Machine harvest: 1 = not adapted 2 = adapted
- Recommended region: 1 = Northeast/Midatlantic 2 = Southeast  
 3 = Midwest/Great Lakes 4 = South-central  
 5 = Great Plains 6 = Intermountain West  
 7 = Northwest 8 = Central California  
 9 = Southwest/So. **California** 10 = General  
 11 = Other (specify) \_\_\_\_\_
- Growing season temperature: 1 = cool 2 = normal warm 3 = hot 4 = general
- Growing season humidity: 1 = humid 2 = semi-arid 3 = general
- Soils: 1 = mineral 2 = organic 3 = general

10. **RESISTANCE OR TOLERANCE TO ENVIRONMENTAL STRESS:**

- High temperature fruit set (subjective evaluation based on fruit set at temperatures that **normally** inhibit set in area of evaluation):  
 1 = poor 2 = fair 3 = good ('Summertime') AREA western North Carolina
- Low temperature fruit set (subjective evaluation based on fruit set at low temperatures that **normally** inhibit germination): 1 = poor 2 = fair 3 = good ('Veecrop')  
 AREA western North Carolina
- Low temperature seed germination: 1 = poor ( ) 2 = fair ( )  
 3 = good ( )

11. **RESISTANCE TO FRUIT DISORDERS** (Use code: G-unknown, 1-susceptible, Z-resistant):

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Blossom end rot      | <input checked="" type="checkbox"/> Bursting                     |
| <input checked="" type="checkbox"/> Catface              | <input checked="" type="checkbox"/> Cracking, radial             |
| <input checked="" type="checkbox"/> Cracking, concentric | <input checked="" type="checkbox"/> Fruit pox                    |
| <input checked="" type="checkbox"/> Gold fleck           | <input checked="" type="checkbox"/> Graywall or blotchy ripening |

4. LEAF (Mature leaf under the 1st to 3rd inflorescences) (continued):

- 1 Surface of major leaflets: 1 = smooth 2 = rugose (bumpy or veiny)
- 1 Leaflet: 1-normal 2 = slightly wilty 3 = wilty
- 2 Shape of major leaflets: 1 = broadly ovate 2 = ovate to lanceolate  
3 = slender and lanceolate, tapered to a point
- 2 Pubescence or hairiness: 1 = smooth 2 = normal 3 = wooly
- 4 Color of leaflets: 1 = light green (Earlinorth) 2 = medium green ( )  
3 = gray-green ( ) 4 = dark green (UC82)
- 4 Color of leaf on check variety (same scale): Variety Flora-Dade

5. FLORESCENCE:

- 1 Type: 1 = simple (racemose) 2 = forked (2 major axes) 3 = compound (much branched)
- 1 No. of flowers setting fruit (in 2nd or 3rd inflorescence):  
1 = 1-4, 2 = 4-8, 3 = 8-12, 4 = 12 or more

6. FLOWER:

- 1 Calyx: 1 = normal (lobes awl-shaped) 2 = macrocalyx (lobes large, leaflike)  
3 =
- 1 Flower Style Style exertion: pubescence color/fleshy 1 = 1 yellow 1 = = included absent 2 = 2 old = 2 = space gold even with 3 = = white stamens dense or lax = exerted

**Anthers:** 1 = all fused into tube 2 = separating into 2 or more groups at anthesis  
**Fasciation** (1st flower of 2nd or 3rd inflorescence):  
 1 = absent 2 = occasionally present = frequently present

7. FRUIT (3rd fruit of 2nd or 3rd cluster):

- 1 Abscission layer: 1 = present (pedicellate) 2 = absent (jointless)
- 1 0 mm. Length of pedicel (from abscission layer or -joint to calyx attachment)
- 8 Mature fruit: Maximum diameter:  
 1 = small cherry (< 20 mm) 2 = large cherry (20-35 mm)  
 3 = cocktail (35-48 mm) 4 = U.S. extra small (48-54 mm)  
 5 = U.S. small (54-58 mm) 6 = U.S. medium (58-64 mm)  
 7 = U.S. large (64-73 mm) 8 = U.S. extra large (73-88 mm)  
 9 = U.S. maximum large (88-100 mm) 10 = U.S. maximum large (> 100 mm)
- 7 Maximum diameter of check variety, same classes as above  
(Specify name) Flora-Dade

2  1  0 g Fruit weight  1  8  5 g Check variety Flora-Dade

Predominant fruit shape:

